STEREO INTEGRATED AMPLIFIER/TUNER

R-SE9/SE9T

SERVICE MANUAL

[This R-SE9 is E type.]

KENWOOD

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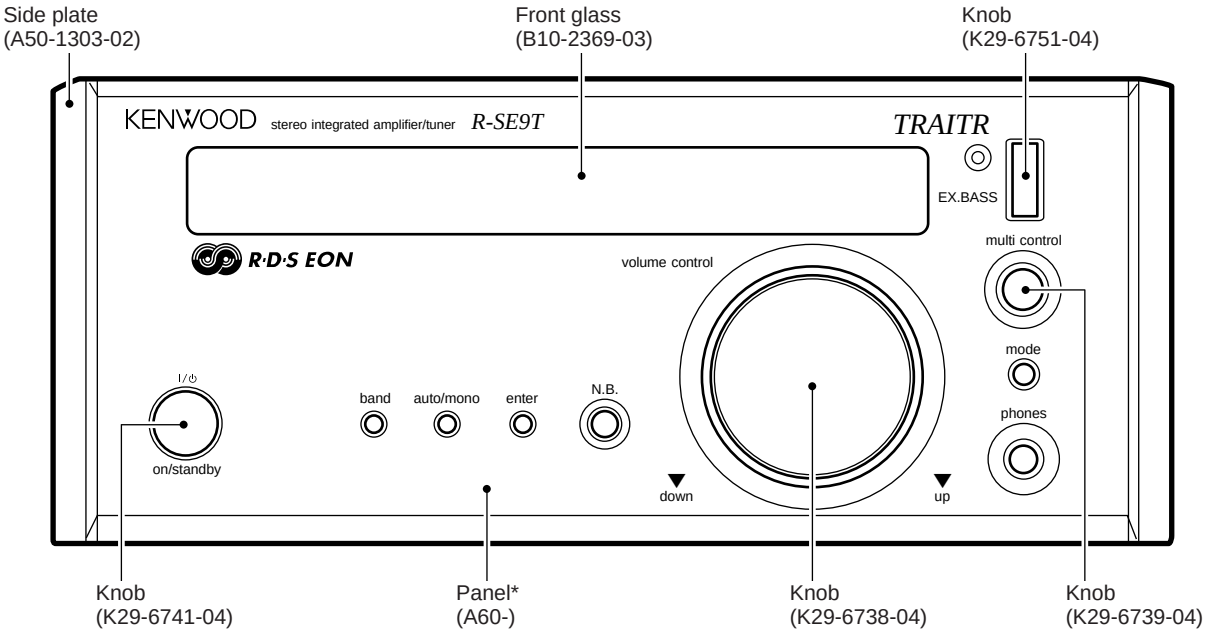

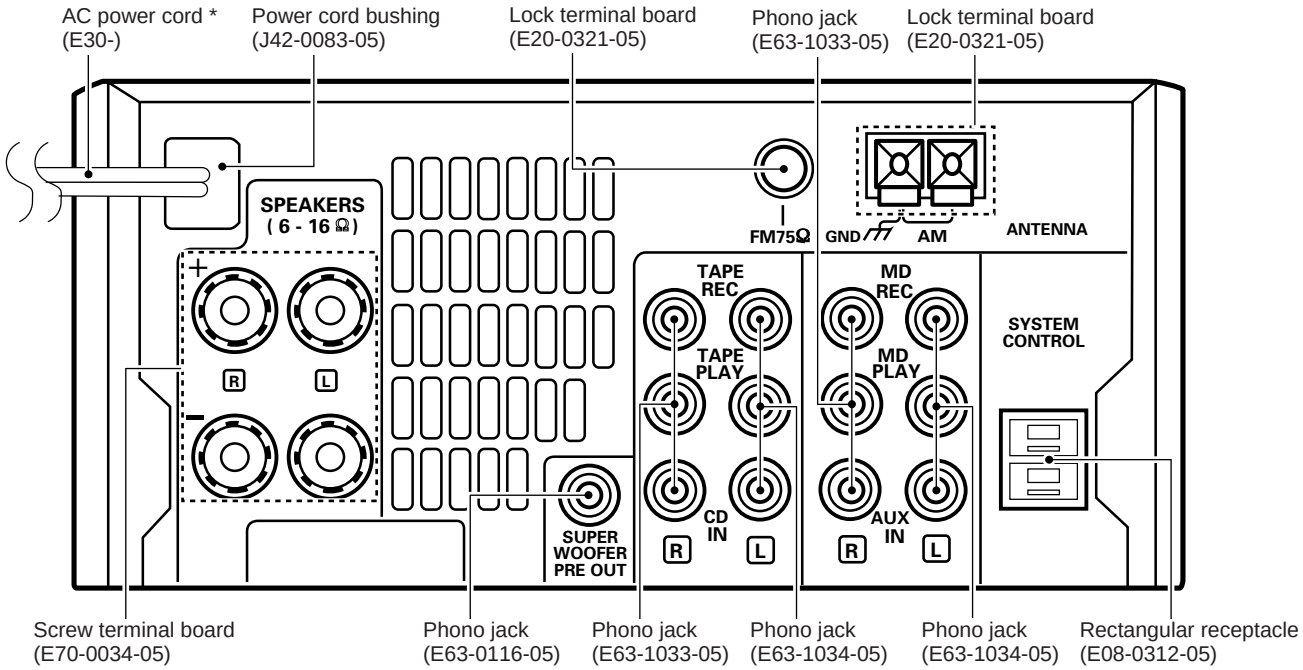

Illustrator is R-SE9T.

*** Refer to parts list on page20.**

PRECAUTIONS FOR REPAIR

- For the SERIAL TEST CODE LIST of the circuit description, see Service manual (B51-5210-00) of R-SA7.
- For the INITIAL STATE, the BACK UP and the MICROPROCESSOR of the circuit description, see Service manual (B51-5373-00) of R-SE7.
- No connection of ground line if disassemble the unit.
- Please connection the ground line on rear panel, PCBs, Chassis and some others.

R-SE9/SE9T

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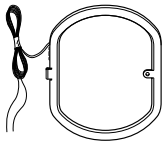
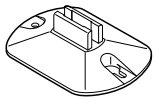
SPECIFICATIONS .....Back cover

Accessories

AM loop antenna (1)
(T90-0820-05)

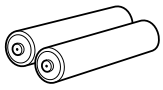


AM loop antenna stand (1)
(J19-3645-05)

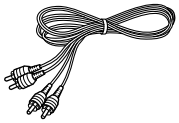


FM indoor antenna (1)
(T90-0806-05)

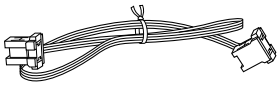
Batteries (R6/AA) (2)



Audio cords (2)
(E30-0615-05)

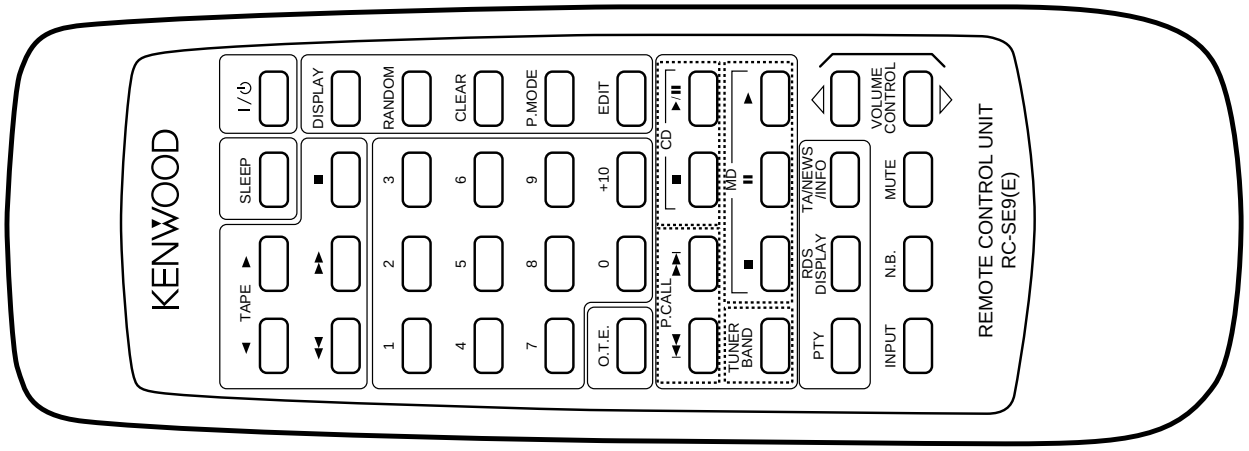


System control cord (1)
(E30-2628-05)



Remote control unit (1)
(A70-1155-05) .....RC-SE9(E)

Battery cover (A09-0374-08)



CIRCUIT DESCRIPTION

1. DESTINATION LIST OF TUNER

1-1 Destination List of Tuner

Destination	BAND	Receive frequency range	Channel space	1F	PLL reference frequency	DIODE SW(X14) DSW1 D26	DIODE SW(X14) DSW2 D29
K1	FM	87.5MHz~108.0MHz	100kHz	+10.7MHz	25kHz	1	1
	AM	530kHz~1700kHz	10kHz	+450kHz	10kHz		
E1	FM	87.5MHz~108.0MHz	50kHz	+10.7MHz	25kHz	0	1
	AM	531kHz~1602kHz	9kHz	+450kHz	9kHz		
E3 (RDS)	FM	87.5MHz~108.0MHz	50kHz	+10.7MHz	25kHz	1	0
	AM	531kHz~1602kHz	9kHz	+450kHz	9kHz		
M	K2 or E1 is changed the setting "DSW1". (DSW1=1 : K2, 0 = E1)					X	1

0 : NO DIODE 1 : DIODE X : SWITCHING TRANSISTOR

2. TEST MODE

2-1. Initializing

The system is initialized when the power is turned on while pressing the POWER key.

(1) Contents of operation

• All the functions are initialized.

2-2. AMP test mode using main unit's keys

2-2-1. Entering the AMP test mode

• Turn on the power while pressing the BAND key.

2-2-2. Canceling the AMP test mode

• By turning off the power, the system is initialized and the test mode is canceled.

2-2-3. Contents of AMP test mode

(1) Automatic POWER ON

• The POWER ON state is entered whenever the power is turned on while pressing the BAND key. All functions are then initialized and activated in the all-lighting mode.

• Sub-clock oscillation diagnosis function
The oscillation diagnosis (existence of oscillation and measurement of period) of a sub-clock is performed before the test mode is entered. If the diagnosis result is OK, the system enters the test mode.
If the diagnosis result is NG, the oscillation of the sub-clock is diagnosed again. If the result is OK, the system enters the test mode. If the diagnosis result is continuously NG five times, the system stops with ERR 1 and ERR 2 displayed.

(2) All-lighting mode

• All the fluorescent display indicators and LED lamps light when the power is turned on while pressing the BAND key.

• After that, the all-lighting mode is canceled when any main unit's key is pressed. The normal display obtained when the selector is set to TUNER then appears.

(3) Others

• The AMP test mode is not terminated even if the selector is set to positions other than TUNER.
• In the AMP test mode, the muting during mode selection is not controlled. However, the operation during the power-on sequence is the same as the normal operation.
• The SP protection operation is also the same as the normal operation.
• In the AMP test mode using main unit's keys, the keys below provide a special operation according to the position where the selector is set. The main unit's keys except described below and the rotary encoder provide the normal operation.

(4) When selector is set to TUNER

Key	Operation
EX. BASS key	Increments the P.CALL every time this key is pressed.
N.B. key	Decrement the P.CALL every time this key is pressed.
ENTER key	Selects the display cyclically in the order below every time this key is pressed.

① Write data in the unused area of E2PROM, then read the written data. If the read data is the same as the written data, "RAM OK" is displayed in the fluorescent display indicator. If the former is different from the latter, "RAM NG" is displayed.
② Set the TUNER ATT to OFF and display the S level in hexadecimal when the ENTER key is pressed. ("ATT OFF **" is displayed in the fluorescent display indicator.)
③ Set the TUNER ATT to ON and display the S level in hexadecimal when the ENTER key is pressed. ("ATT ON **" is displayed in the fluorescent display indicator.)

* The special display using the ENTER key is continued until the next operation is carried out. (**: S LEVEL)
When keys other than ENTER are pressed in items ① to ③ above, the TUNER ATT is set to OFF and the normal display appears. The operation corresponding to the key that has been pressed is performed in this case.

(5) When selector is set to positions other than TUNER

[ENTER key] Every time this key is pressed, master VOLUME level is selected cyclically.

INITIALIZE level → MAX → MID → MIN →

Value of Master VOLUME	Press the ENTER key.
MAX	86
MID	40
MIN	1
INITIALIZE	7

CIRCUIT DESCRIPTION

[AUTO key] Selects the MUTE operation and equalizer cyclically in the order below for operation display every time this key is pressed.

-> MUTE operation -> Minimum -> Maximum -> ⌘ Pre-condition

⌘ In the operation for except the AUTO key, become pre-condition equlizer .

⌘ Pre condition : The equlizer becomes the condition to be pushed the AUTO key before (include N.B. circuit).

(6) SERIAL TEST CODE LIST

Refer to Service manual (B51-5210-00) of R-SA7 on page 7.

[BAND key] Every time this key is pressed, all the displays go off and the normal display is selected cyclically.

2-3. RDS test mode using main unit's keys

2-3-1. Entering the RDS test mode

- Turn on the power while pressing the N.B. key.

2-3-2. Canceling the RDS test mode

- By turning off the power, the system is initialized and the test mode is canceled.

2-3-3. Contents of RDS test mode

- The POWER ON state is entered whenever the power is turned on while pressing the N.B. key. All the functions are then initialized.
- In the RDS test mode using main unit's keys, the keys below provides a special operation according to the position where the selector is set. The main unit's keys except described below and the rotary encoder provide the normal operation.

Key	Operation
EX. BASS key	Performs the same operation as for remote control key "DISPLAY" every time this key is pressed.
MODE key	Performs the same operation as for remote control key "PTY" every time this key is pressed.
N.B. key	Performs the same operation as for remote control key "TA" every time this key is pressed.
ENTER key	Selects the display cyclically in the order below every time this key is pressed.

① Write data in the unused area of EEPROM, then read the written data. If the read data is the same as the written data, "RAM OK" is displayed in the fluorescent display indicator. If the former is different from the latter, "RAM NG" is displayed.

② Set the TUNER ATT to OFF and display the S level in hexadecimal when the ENTER key is pressed. ("ATT OFF **" is displayed in the fluorescent display indicator.)

③ Set the TUNER ATT to ON and display the S level in hexadecimal when the ENTER key is pressed. ("ATT ON **" is displayed in the fluorescent display indicator.)

* The special display using the ENTER key is continued until the next operation is carried out. (**: S LEVEL)

When keys other than ENTER are pressed in items ① to ③ above, the TUNER ATT is set to OFF and the normal display appears. The operation corresponding to the key that has been pressed is performed in this case.

2-4. SERIAL TEST MODE

(1) Setting the serial test mode

The unit is put into the serial test mode when a serial code "TEST ON" is input during the POWER-ON sequence.

In the 16-bit serial test mode, serial code C27FH is input.

- In the serial test mode, all remote control keys and ordinary serial codes are disabled. Only the panel keys perform the same operation as usually.

(2) Canceling the serial test mode

- The serial test mode is canceled to return to the ordinary mode by inputting a "TEST OFF" code (C27 EH). After the ordinary mode was returned, the serial mode is returned to the state before the test mode is entered. The backup operation is not initialized.
- The serial test mode is also canceled when the AC power is turned OFF.

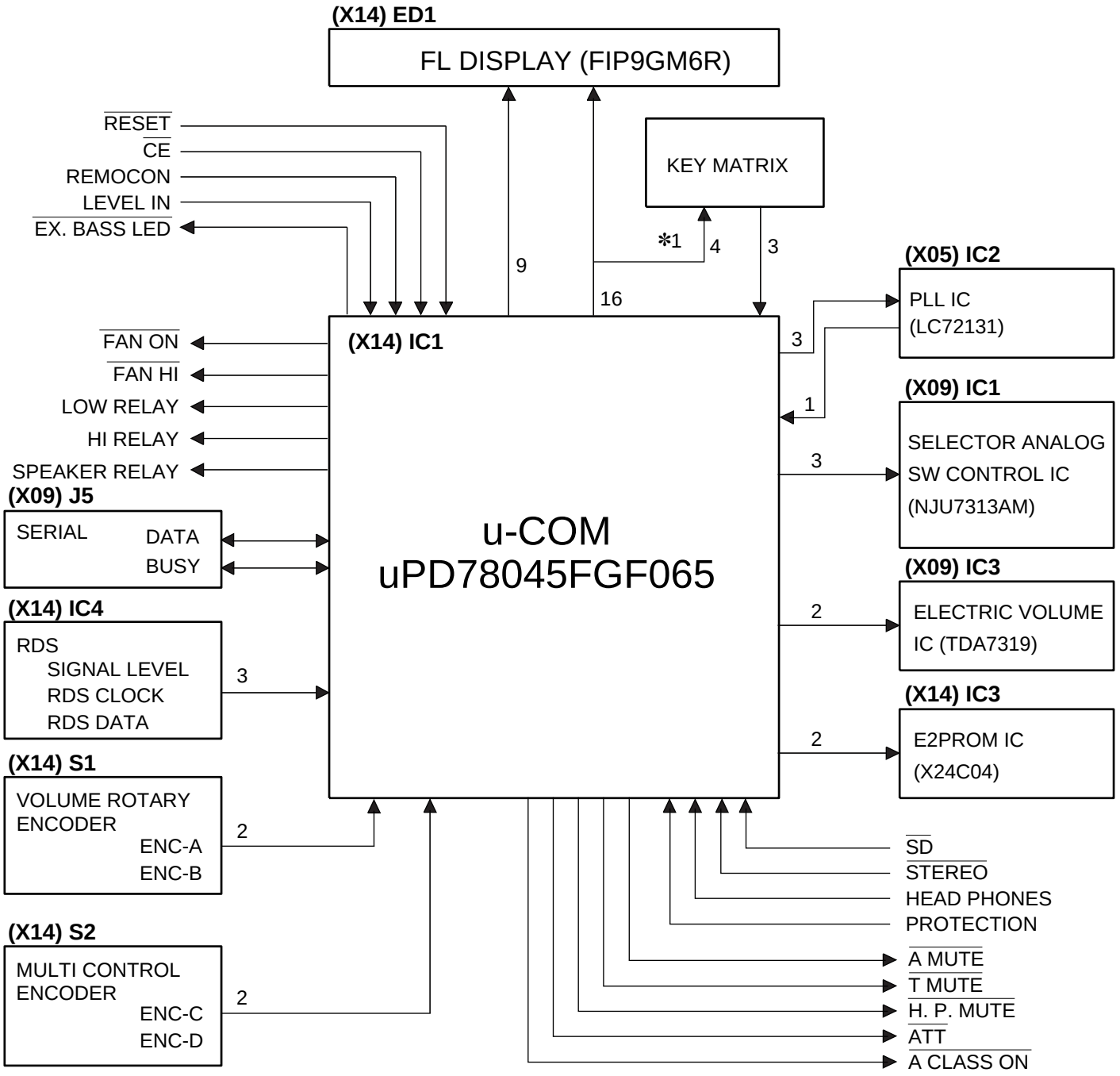
(3) Cautions

- The serial test code is prescribed as a 16-bit code only.
- The operations below are inhibited in the serial test mode. The operations mentioned above cannot be guaranteed when they are performed in the serial test mode.
- An identical code is output when the serial test mode code is input.

CIRCUIT DESCRIPTION

3. Microprocessor : uPD78045FGF065 (X14 : IC1)

3-1 Microprocessor periphery block diagram



Key matrix No. of ◯ : u-COM port No.

	⑥⓪ **KR0**	⑤⑨ **KR1**	⑤⑧ **KR2**
⑥④ KS0	DSW0 (D25)	DSW1 (D26)	DSW2 (D29)
⑥③ KS1	POWER	AUTO / MONO	BAND
⑥② KS2	N. B.	MODE	No. use
⑥① KS3	EX. BASS	ENTER	No use

CIRCUIT DESCRIPTION

3-2 Pin description

Pin No.	Name	I/O	Description	Active
1~7	7G~1G	O	FL grid 7~1	—
8	VDD	—	Micro processor power supply (+5V)	—
9	E2PROM SCL	O	E2PROM control clock	—
10	E2PROM SDA	I/O	E2PROM control data	—
11	ENC C	—	Multi control encoder input A	—
12	ENC D	—	Multi control encoder input B	—
13	A CLASS ON	O	Power ON/OFF control signal	H : OFF L : ON
14	SEL STB	O	Selector IC strobe	—
15	SEL/PLL CLK	O	SEL/PLL IC control clock	—
16	SEL/PLL DATA	O	SEL/PLL IC control data	—
17	RESET	I	Microprocessor reset	L : RESET ON
18	CE	I	AC OFF(MAIN POWER) detection Signal	L : AC OFF
19	PLL DO	O	IF count data	—
20	AVSS	—	A/D power SUPPLY (GND)	—
21	PLL CE	O	PLL chip enable control	L : CE
22	T MUTE	O	Tuner mute signal	L : MUTE ON
23	STEREO	I	Stereo signal detection	L : STEREO ON
24	SD	I	Synchronized signal detection	—
25	VOL SCL	O	Electric volume IC control clock	—
26	VOL SDA	O	Electric volume IC control data	—
27	LEVEL IN	I	Volume level input	—
⌘ 28	S.LEVEL(RDS)	I	Signal level	—
29	A VDD	—	A/D power supply (+5V)	—
30	A VREF	—	A/D reference voltage(+5V)	—
31, 32	OSC	—	32kHz oscillator	—
33	Vss	—	Microprocessor power supply (GND)	—
34, 35	OSC	—	4.19MHz oscillator	—
36	S.DATA	I/O	16bit system data	—
37	S.BUSY	I/O	16 bit system busy	H : BUSY L : READY
38	H.P. MUTE	O	Head phones mute signal	L : ON
39	ATT	O	-6dB attenuator	H : OFF L : ON
40	A MUTE	O	Audio mute signal	L : ON
41	HIGH RELAY	O	AMP high relay control	H : ON L : OFF
42	LOW RELAY	O	AMP low relay control	H : ON L : OFF
43	SP RELAY	O	Speaker relay control	H : ON L : OFF
⌘ 44	CLK(RDS)	I	RDS clock	—
⌘ 45	DATA(RDS)	I	RDS data	—
46	PROTECTION	I	Protection detection	H : ON L : OFF
47	REMOCON	I	Remote control input	—
48	IC	—	—	—
49	EX. BASS LED	O	EX. BASS LED	H : OFF L : ON
50	FAN HI	O	Fan speed control signal	H : LOW L : HIGH
51	FAN ON	O	Fan power supply control signal	H : OFF L : ON
52	VDD	—	Microprocessor power supply (+5V)	—
53	ENCA	I	Volume encoder in put A	—
54	ENC B	I	Volume encoder input B	—
55	HEAD PHONE	I	Head phones signal detection	H : ON L : OFF
56, 57	NC	O	—	—
58~60	KR2~KR0	I	KEY return 2~0	H : KEY ON
61~64	SEG16~13/KS3~0	O	FL Segment 6~13 /key scan 3~0	H : ON
65~70	SEG12~SEG7	O	FL Segment 12~7	H : ON
71	V load	—	FL drive power supply (-30V)	—
72~77	P6 SEG6~SEG1	O	FL Segment 6~1	H : ON
78	NC	O	—	—
79, 80	9G, 8G	O	FL grid 9, 8	—

⌘ E/T type only, other types unused.
The RDS PTY AF search always corresponds to a span search of 100kHz. Therefore, a span search of 50 KHz cannot be performed.

ADJUSTMENT

FM SECTION

X05-4622-71 (T TYPE)

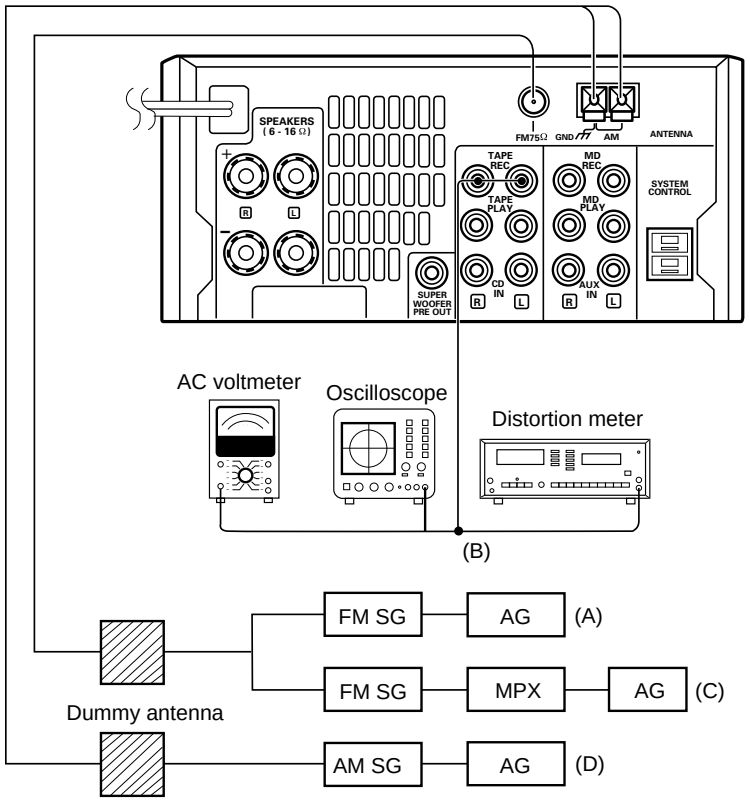
NO.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	DISCRIMINATOR	(A) 98.0kHz 1kHz, ±75kHz dev. 60dBμ(ANT input)	Connect a DC voltmeter between Pin 1 and Pin 2 of CN 2.	MONO 98.0MHz	L 31	0V	(a)
					L 32	Minimum distortion.	
2	DISTORTION (STEREO)	(C) 98.0MHZ 1kHz, ±68.25kHz dev. Pilot: ±6.75kHz dev. 60dBμ(ANT input)	(B)	AUTO 98.0MHz	IFT (A1)	Minimum distortion.	(a)

AUDIO SECTION (X09-4952-70)

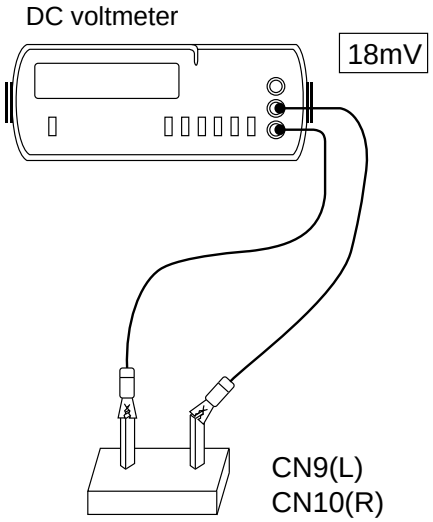
NO.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	AMP SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
POWER: ON							
1	IDLE CURRENT	—	Connect a DC voltmeter across CN9(L) CN10(R) (X09, A/4)	Volume : 0	VR1(L) VR2(R) (X09, A/4)	18mV	(b)

SYSTEM CONNECTIONS

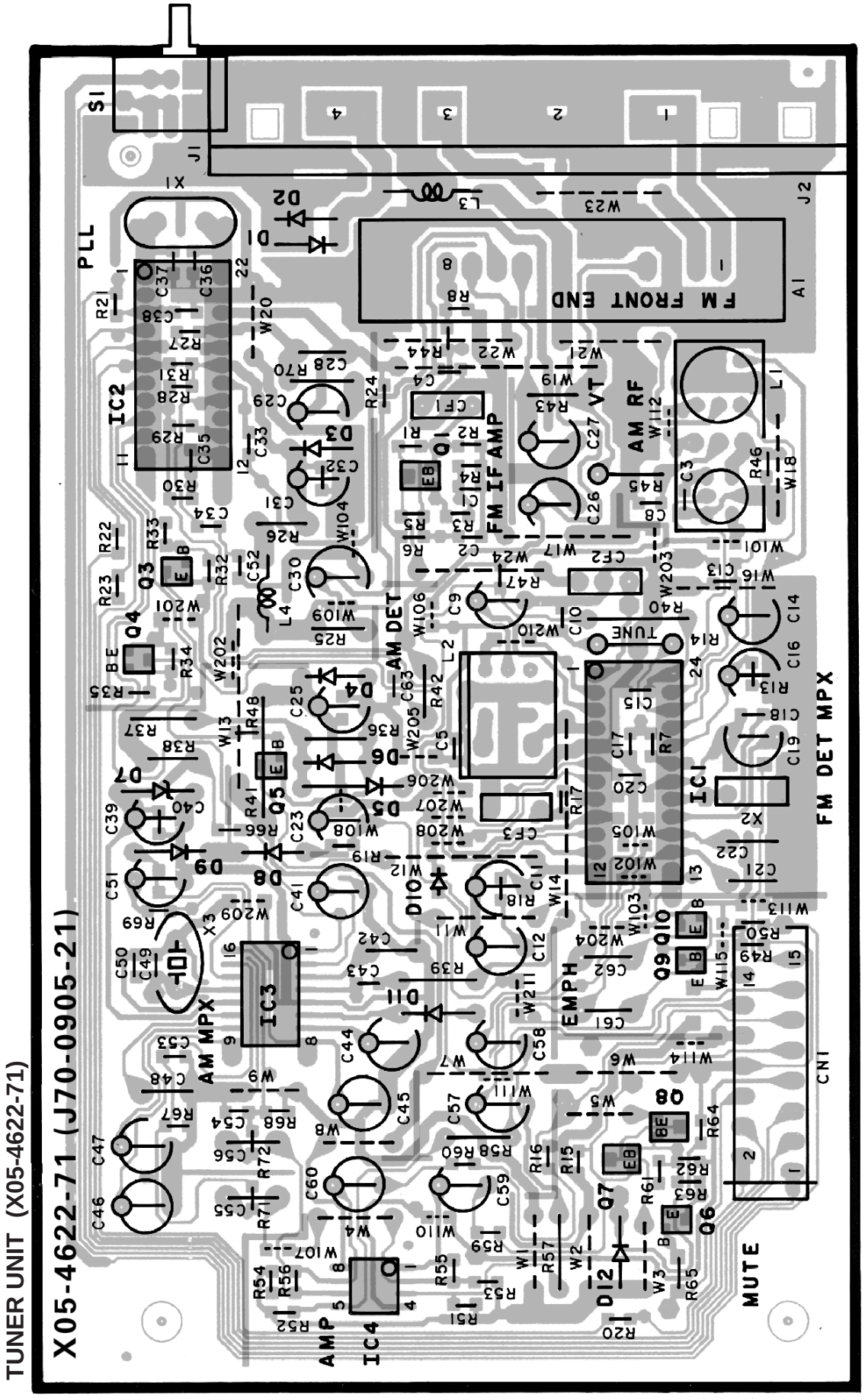
(a)



(b)



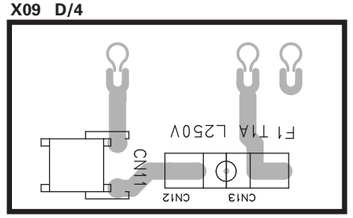
PC BOARD(Component side view)



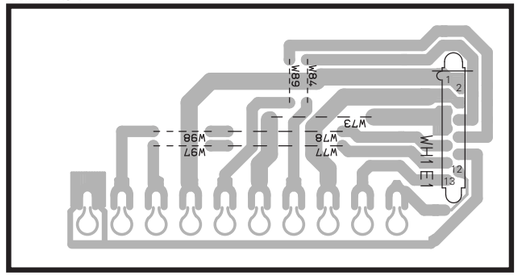
Refer to the schematic diagram for the value of resistors and capacitors.

PC BOARD(Component side view)

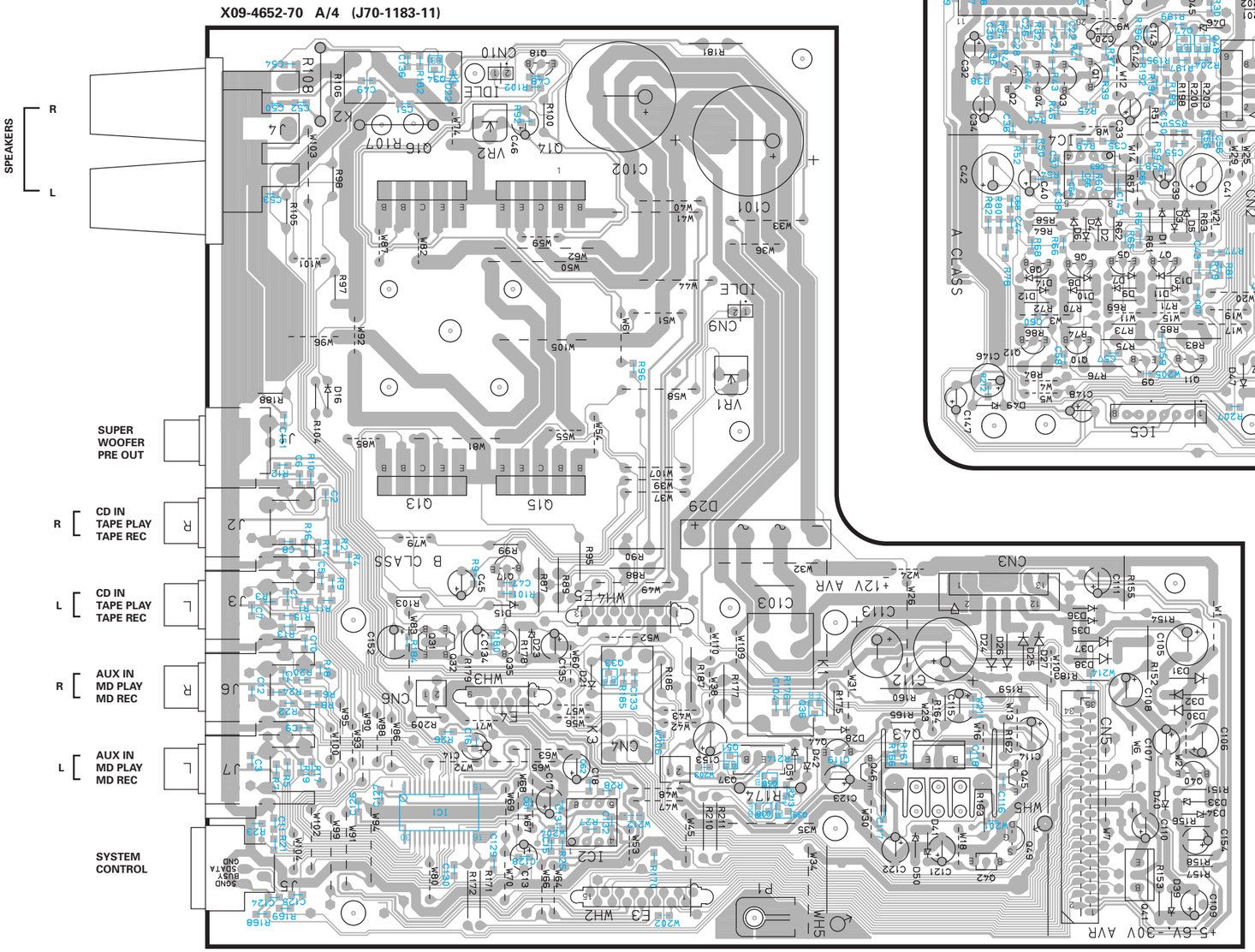
X09 D/4



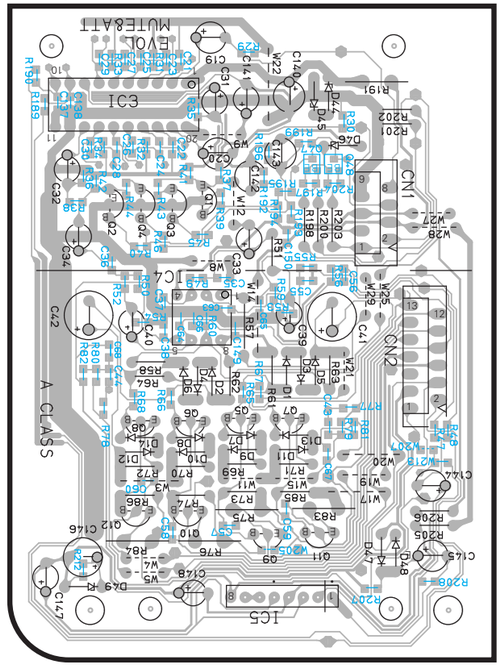
X09 C/4



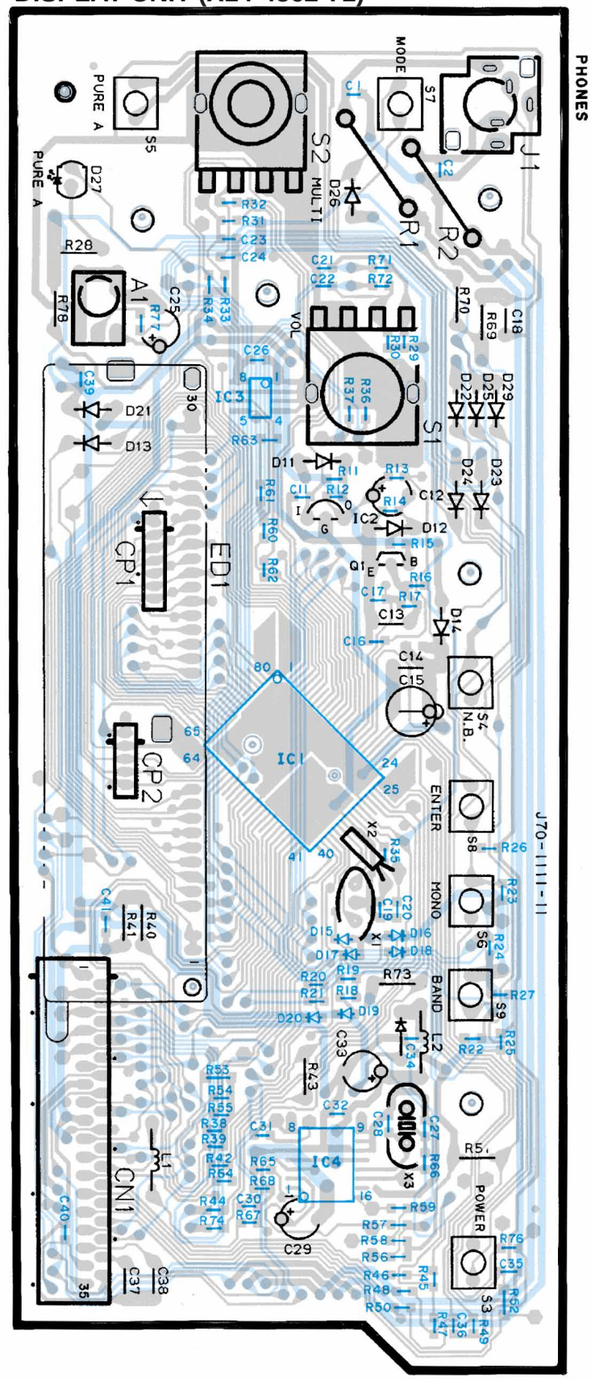
X09-4652-70 A/4 (J70-1183-11)



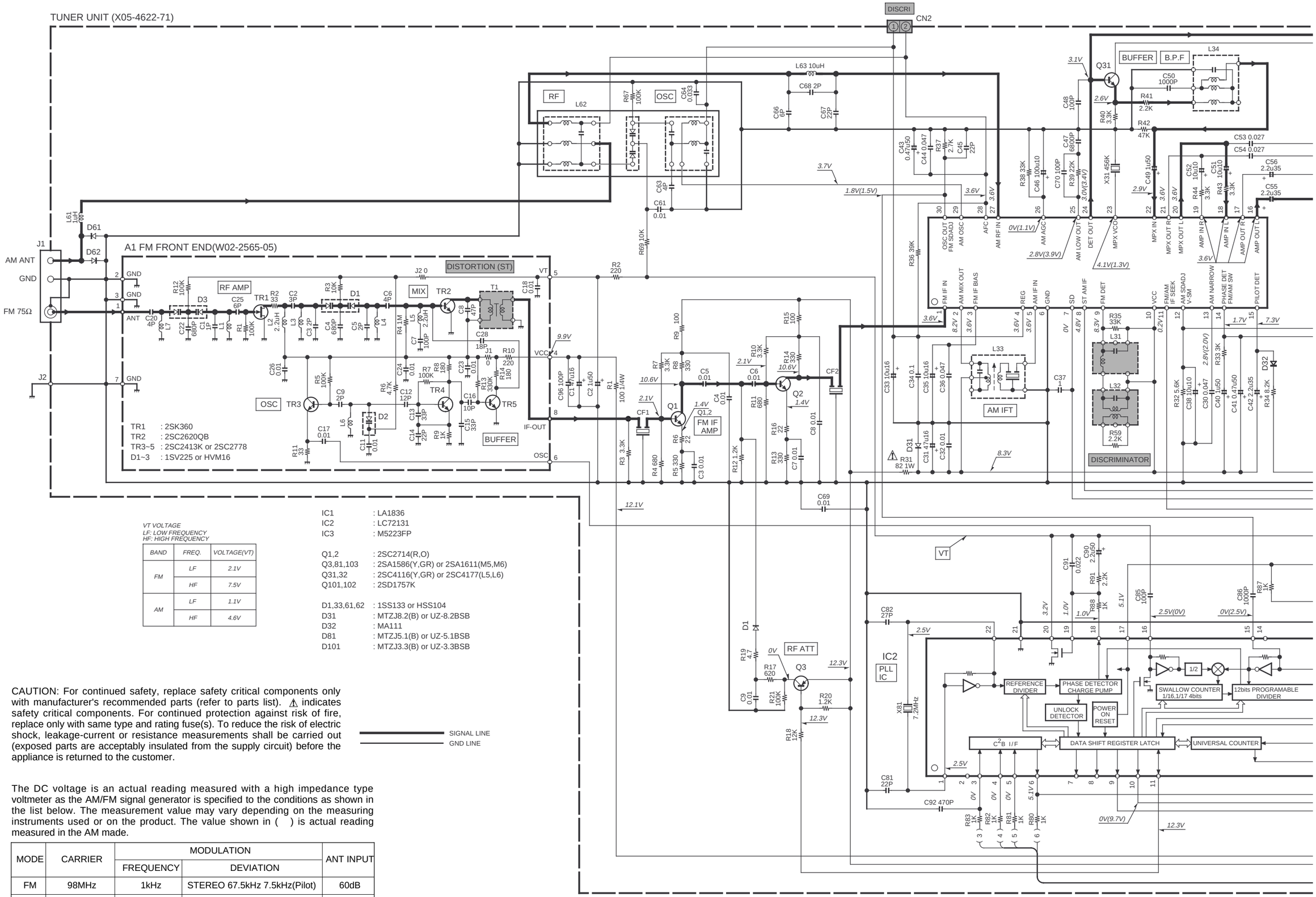
X09 B/4



DISPLAY UNIT (X14-4562-71)



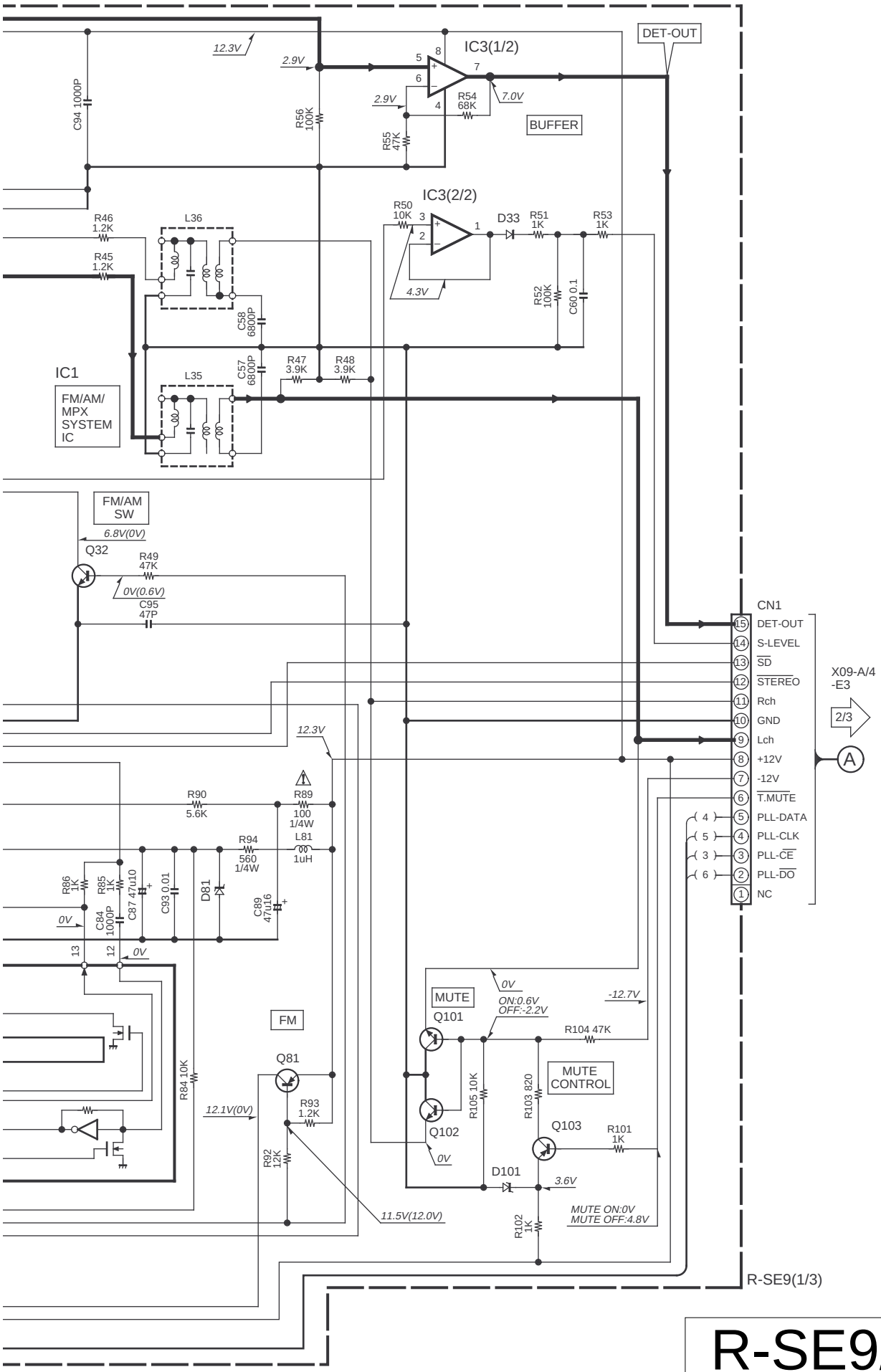
Refer to the schematic diagram for the value of resistors and capacitors.



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter as the AM/FM signal generator is specified to the conditions as shown in the list below. The measurement value may vary depending on the measuring instruments used or on the product. The value shown in ( ) is actual reading measured in the AM made.

MODE	CARRIER	MODULATION		ANT INPUT
		FREQUENCY	DEVIATION	
FM	98MHz	1kHz	STEREO 67.5kHz 7.5kHz(Pilot)	60dB
AM	1000(999)kHz	400Hz	MONO 30% MOD	60dB



R-SE9/SE9T

Y05-3682-71

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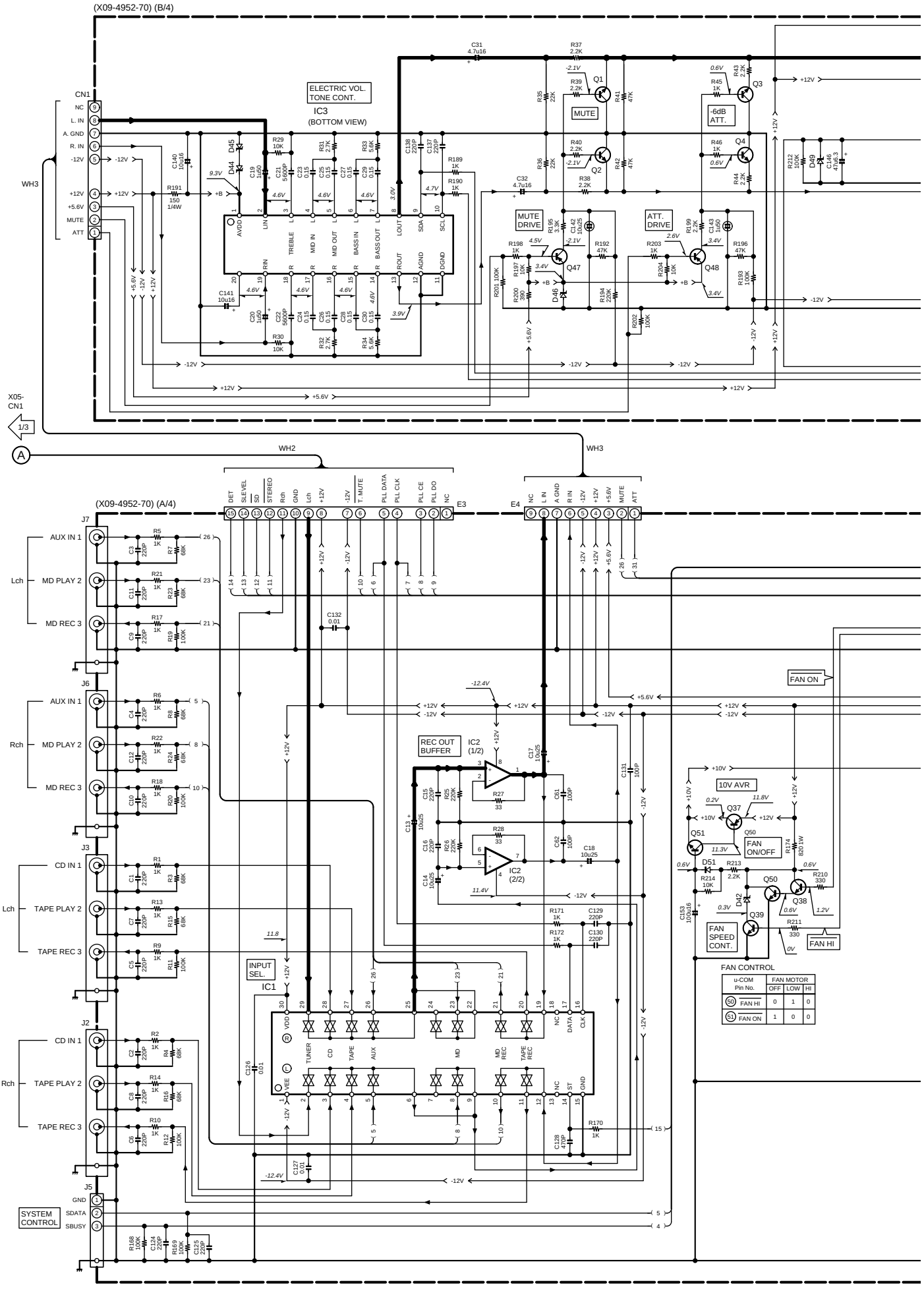


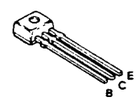
u-COM Pin No.		FAN MOTOR OFF	LOW	HI
50	FAN HI	0	1	0
51	FAN ON	1	0	0

CAUTION: *For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.*

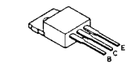
The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.

IC1	:	NJU7313AM	Q1-4	:	2SC2878(B)
IC2,4	:	NJM4565D-D	Q5,6,11,12,17,18	:	2SC1845(F,E)
IC3	:	TDA7319	Q7-10,35	:	2SA992(F,E)
IC5	:	NJM4565L-D	Q13,14	:	TRAITR2N
			Q15,16	:	TRAITR2P
D1-16,21,28,35,36,47,48,51			Q31,32,45	:	2SC2458(Y,GR) or 2SC3311A(Q,R)
	:	1SS133 or HSS104	Q33,34,36,39	:	2SC4097(Q,R)
D22	:	MA111	Q37	:	2SB1640
D23,44,45,49	:	RD4,7ES(B) or MTZJ4.7(B)	Q38,50,51	:	2SC4116(Y,GR) or 2SC4177(L5,L6)
D24-27,30-32,37,38			Q40,44	:	2SA1534(R,S)
	:	S5688B or 1SR139-400	Q41	:	2SD2525
D29	:	D5SBA20F03 or RBV-602LFA	Q42	:	UN4219 or DTC113ZSA
D33,34	:	RD16ES(B) or MTZJ16(B)	Q43	:	2SD2589
D39,42,50	:	RD6.2ES(B) or MTZJ6.2(B)	Q46	:	2SA1048(Y,GR) or 2SA1309A(Q,R)
D40,41	:	RD5.1ES(B) or MTZJ5.1(B)	Q47,48	:	2SA1586(Y,GR) or 2SA1611(M5,M6)
D46	:	RD3.9ES(B) or MTZJ3.9(B)	Q49	:	2SK246(Y,GR)

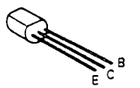
2SC2785



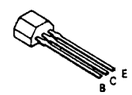
2SD2589



2SA1534A
2SA992
2SC1845
2SC2878

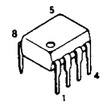


2SA1048
2SC1740S
2SC2458

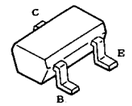


2SA1586
2SC2714
2SC4116

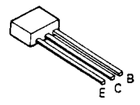
NJM4565D-D



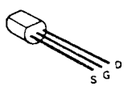
2SD1757K



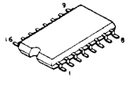
UN4219
2SA1309A
2SC3311A



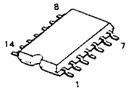
2SK246



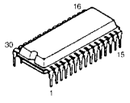
SAA6579T



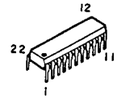
M5223FP



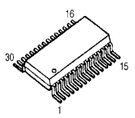
LA1836



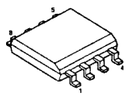
LC72131



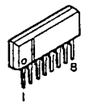
NJU7313AM



X24C04S



NJM4565L-D



SIGNAL LINE
GND LINE
+B LINE
-B LINE

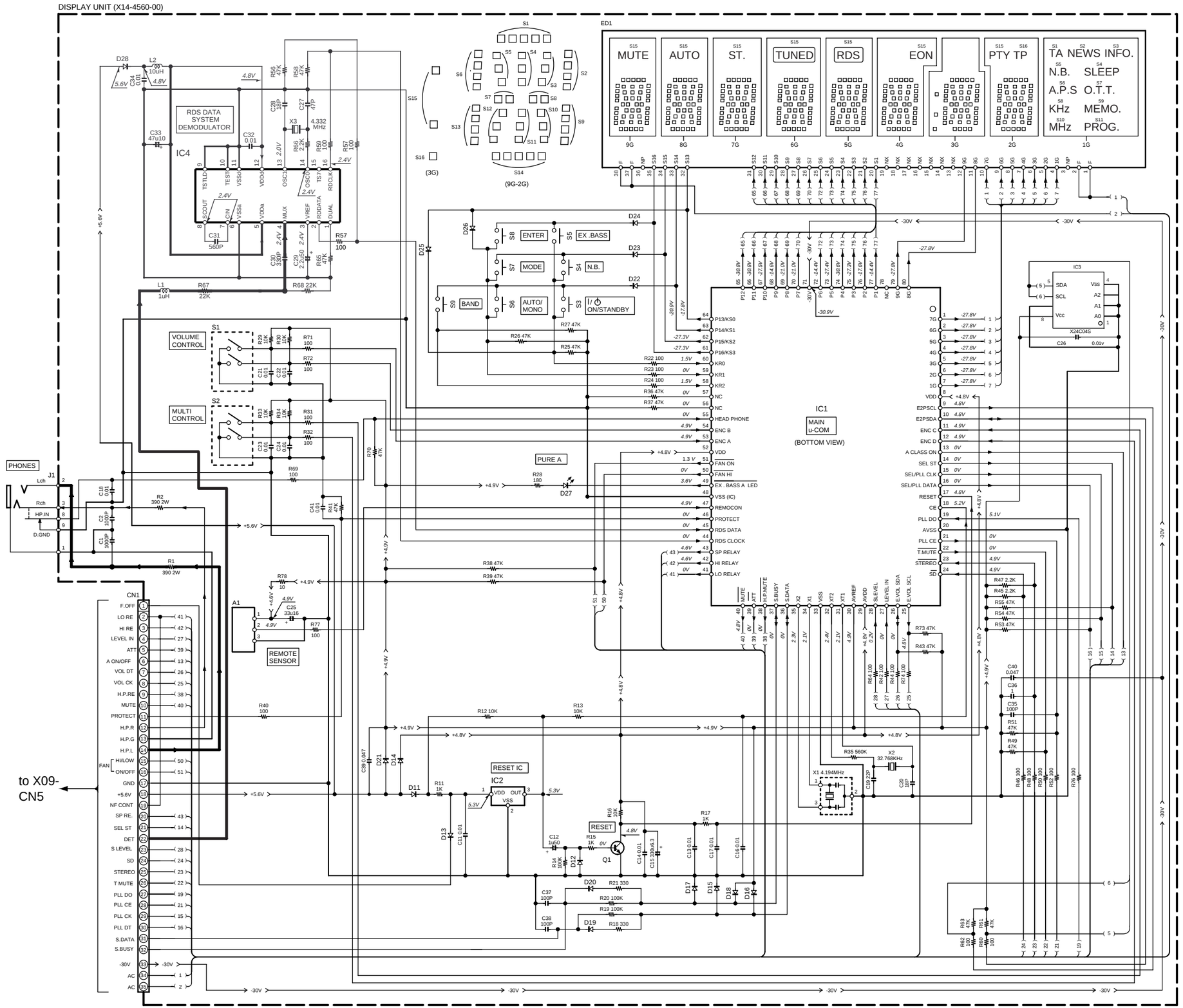
R-SE9/SE9T (2/3)

Y05-3682-71

R-SE9/SE9T

KENWOOD

DISPLAY UNIT (X14-4560-00)



IC1 : UPD78045FGF065
IC2 : S-806D-Z
IC3 : X24CD4S
IC4 : SAA6579T

D11-14,21-26,28 : 1SS131 or HSS104A
D15-20 : MA111
D27 : B30-2515-05

Q1 : 2SC1740S(Q,R) or 2SC2785(F,E)

ED1 : FIP9GM6R

A1 : W02-2561-05

SIGNAL LINE
GND LINE
+B LINE
-B LINE

CAUTION: *For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.*

The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.

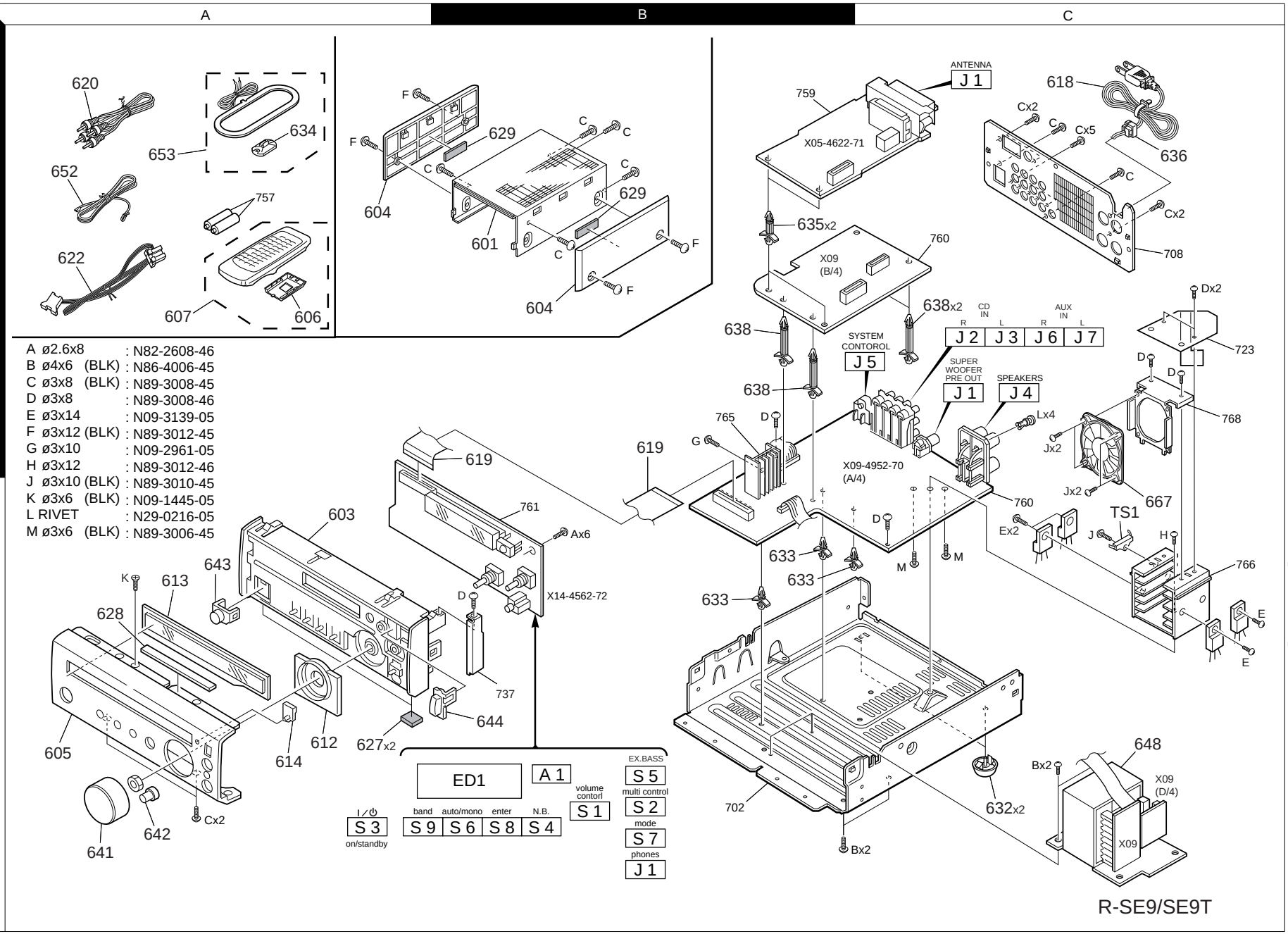
R-SE9/SE9T(3/3)

Y05-3682-71

R-SE9/SE9T

KENWOOD

EXPLODED VIEW (UNIT)



A ø2.6x8 : N82-2608-46
B ø4x6 (BLK) : N86-4006-45
C ø3x8 (BLK) : N89-3008-45
D ø3x8 : N89-3008-46
E ø3x14 : N09-3139-05
F ø3x12 (BLK) : N89-3012-45
G ø3x10 : N09-2961-05
H ø3x12 : N89-3012-46
J ø3x10 (BLK) : N89-3010-45
K ø3x6 (BLK) : N09-1445-05
L RIVET : N29-0216-05
M ø3x6 (BLK) : N89-3006-45

R-SE9/SE9T

Parts with exploded numbers larger than 700 are not supplied.

✻ New Parts
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Teile ohne **Parts No.** werden nicht geliefert.

❶

Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
R-SE9/SE9T						
601	1B	✻	A01-3567-11	METALLIC CABINET		
603	2A		A22-1772-01	SUB PANEL		
604	1A,1B		A50-1303-02	SIDE PLATE		
605	2A	✻	A60-1366-02	PANEL	E	
605	2A	✻	A60-1374-02	PANEL	T	
606	1A		A09-0374-08	BATTERY COVER		
607	1A	✻	A70-1155-05	REMOTE CONTROLLER ASSY		
612	2A		B07-2362-03	ESCUTCHEON		
613	2A		B10-2369-03	FRONT GLASS		
614	2A		B12-0317-04	INDICATOR		
-			B46-0310-03	WARRANTY CARD		
-			B58-1562-04	CAUTION CARD (P1,PRA,A5,1)		
-		✻	B60-3715-00	INSTRUCTION MANUAL(ENGLISH)	T	
-		✻	B60-3716-00	INSTRUCTION MANUAL(FRENCH)	E	
-		✻	B60-3717-00	INSTRUCTION MANUAL(DUTCH)	E	
-		✻	B60-3718-00	INSTRUCTION MANUAL(GERMAN)	E	
-		✻	B60-3719-00	INSTRUCTION MANUAL(ITALIAN)	E	
-		✻	B60-3720-00	INSTRUCTION MANUAL(SPANISH)	E	
⚠ 618	1C		E30-2592-15	AC POWER CORD	E	
⚠ 618	1C		E30-2721-05	AC POWER CORD	T	
619	1B		E35-1944-05	FLAT CABLE		
620	1A		E30-0615-05	AUDIO CORD		
622	1A		E30-2628-05	CORD WITH CONNECTOR		
627	2A		G11-2325-14	CUSHION		
628	2A		G11-2352-04	CUSHION		
629	1B		G11-2353-04	CUSHION		
-			H10-7351-02	POLYSTYRENE FOAMED FIXTURE		
-		✻	H10-7352-12	POLYSTYRENE FOAMED FIXTURE		
-		✻	H12-2358-04	PACKING FIXTURE	T	
-			H25-1579-04	PROTECTION BAG	E	
-			H25-1581-04	PROTECTION BAG	T	
-			H25-1595-04	PROTECTION BAG		
-		✻	H50-2493-04	ITEM CARTON CASE	E	
-		✻	H50-2852-04	ITEM CARTON CASE	T	
632	2C		J02-0370-05	FOOT		
633	2B	✻	J19-5877-05	UNIT HOLDER		
634	1A		J19-3645-05	ANTENNA STAND		
635	1B		J19-5878-05	UNIT HOLDER		
⚠ 636	1C		J42-0083-05	POWER CORD BUSHING		
638	1B,1C	✻	J19-5916-05	UNIT HOLDER		
-			J61-0307-05	WIRE BAND		
641	2A		K29-6738-04	KNOB(VOLUME)		
642	2A		K29-6739-04	KNOB(MULTI)		
643	2A		K29-6741-04	KNOB(POWER)		
644	2B		K29-6751-04	KNOB(EX BASS)		
⚠ 648	2C	✻	L07-2544-05	POWER TRANSFORMER		
652	1A		T90-0806-05	LEAD WIRE ANTENNA		
653	1A		T90-0820-05	LOOP ANTENNA		

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Q : Russia **H :** Korea **M :** Other Areas ⚠ indicates safety critical components.

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❷

Ref. No	Address	New Parts	Parts No.	Description			Destination	Remarks
TUNER UNIT(X05-4622-71)								
C1			CE04KW1C470M	ELECTRO	47UF	16WV		
C2			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C3 -8			CK73FB1H103K	CHIP C	0.010UF	K		
C9			C91-0769-05	CERAMIC	0.010UF	K		
C30			CK73EB1E473K	CHIP C	0.047UF	K		
C31			CE04KW1C470M	ELECTRO	47UF	16WV		
C32			CK73FB1H103K	CHIP C	0.010UF	K		
C33			CE04KW1C100M	ELECTRO	10UF	16WV		
C34			CK73EB1E104K	CHIP C	0.10UF	K		
C35			CE04KW1C100M	ELECTRO	10UF	16WV		
C36			CK73FB1E473K	CHIP C	0.047UF	K		
C37			CK73EF1E105Z	CHIP C	1.0UF	Z		
C38			C90-3217-05	ELECTRO	10UF	10WV		
C40			C90-3253-05	ELECTRO	1.0UF	50WV		
C41			C90-3251-05	ELECTRO	0.47UF	50WV		
C42			C90-3240-05	ELECTRO	2.2UF	35WV		
C43			CE04KW1HR47M	ELECTRO	0.47UF	50WV		
C44			CK73FB1E473K	CHIP C	0.047UF	K		
C45			CC73FCH1H220J	CHIP C	22PF	J		
C46			CE04KW1A101M	ELECTRO	100UF	10WV		
C47			CK73FB1H682K	CHIP C	6800PF	K		
C48			CC73FSL1H101J	CHIP C	100PF	J		
C49			C90-3253-05	ELECTRO	1.0UF	50WV		
C50			CK73FB1H102K	CHIP C	1000PF	K		
C51 ,52			C90-3217-05	ELECTRO	10UF	10WV		
C53 ,54			CK73FB1H273K	CHIP C	0.027UF	K		
C55 ,56			C90-3240-05	ELECTRO	2.2UF	35WV		
C57 ,58			CK73FB1H682K	CHIP C	6800PF	K		
C60			CK73FB1E104K	CHIP C	0.10UF	K		
C61			CK73FB1H103K	CHIP C	0.010UF	K		
C63			CC73FCH1H040C	CHIP C	4.0PF	C		
C64			CK73FB1H333K	CHIP C	0.033UF	K		
C66			CC73FCH1H060D	CHIP C	6.0PF	D		
C67			CC73FCH1H220J	CHIP C	22PF	J		
C68			CC73FSL1H020C	CHIP C	2.0PF	C		
C69			CK73FB1H103K	CHIP C	0.010UF	K		
C70			CC73FSL1H101J	CHIP C	100PF	J		
C81			CC73FCH1H220J	CHIP C	22PF	J		
C82			CC73FCH1H270J	CHIP C	27PF	J		
C84			CK73FB1H102K	CHIP C	1000PF	K		
C85			C91-0745-05	CERAMIC	100PF	K		
C86			C91-0757-05	CERAMIC	1000PF	K		
C87			CE04KW1A470M	ELECTRO	47UF	10WV		
C89			CE04KW1C470M	ELECTRO	47UF	16WV		
C90			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C91			CQ93FMG1H223J	MYLAR	0.022UF	J		
C92			CC73FSL1H471J	CHIP C	470PF	J		
C93			CK73FB1H103K	CHIP C	0.010UF	K		
C94			CK73FB1H102K	CHIP C	1000PF	K		
C95			CC73FCH1H470J	CHIP C	47PF	J		
C96			CC73FSL1H101J	CHIP C	100PF	J		
CN1			E40-4609-05	PIN ASSY				

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❸

Ref. No	Address	New Parts	Parts No.	Description			Destination	Remarks
CN2			E40-4871-05	PIN ASSY				
J1			E20-0321-05	LOCK TERMINAL BOARD(2P,F)				
CF1 ,2			L72-0536-05	CERAMIC FILTER				
L31		✻	L30-0929-05	FM IFT				
L32		✻	L30-0930-05	FM IFT				
L33			L30-0911-05	AM IFT				
L34		✻	L79-1237-05	LC FILTER				
L35 ,36		✻	L79-1236-05	LC FILTER				
L61			L40-1091-17	SMALL FIXED INDUCTOR(1UH)				
L62			L39-1348-05	COMBINATION COIL				
L63			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)				
L81			L40-1091-17	SMALL FIXED INDUCTOR(1UH)				
X31			L78-0637-05	RESONATOR (456KHZ)				
X81			L77-2185-05	CRYSTAL RESONATOR				
R1			RD14NB2E101J	RD	100	J 1/4W		
R2			RK73EB2B221J	CHIP R	220	J 1/8W		
R3			RK73FB2A332J	CHIP R	3.3K	J 1/10W		
R4			RK73FB2A681J	CHIP R	680	J 1/10W		
R5			RK73FB2A331J	CHIP R	330	J 1/10W		
R6			RK73FB2A220J	CHIP R	22	J 1/10W		
R7			RK73FB2A332J	CHIP R	3.3K	J 1/10W		
R8			RK73FB2A331J	CHIP R	330	J 1/10W		
R10			RK73FB2A332J	CHIP R	3.3K	J 1/10W		
R11			RK73FB2A681J	CHIP R	680	J 1/10W		
R12			RK73FB2A122J	CHIP R	1.2K	J 1/10W		
R13 ,14			RK73FB2A331J	CHIP R	330	J 1/10W		
R15			RK73FB2A101J	CHIP R	100	J 1/10W		
R16			RK73FB2A220J	CHIP R	22	J 1/10W		
R17			RK73FB2A621J	CHIP R	620	J 1/10W		
R18			RK73FB2A123J	CHIP R	12K	J 1/10W		
R19			RK73FB2A4R7J	CHIP R	4.7	J 1/10W		
R20			RK73FB2A122J	CHIP R	1.2K	J 1/10W		
⚠ R31			RS14KB3A820J	FL-PROOF RS	82	J 1W		
R32			RK73EB2B562J	CHIP R	5.6K	J 1/8W		
R33			RK73FB2A302J	CHIP R	3.0K	J 1/10W		
R34			RK73FB2A822J	CHIP R	8.2K	J 1/10W		
R35			RK73FB2A333J	CHIP R	33K	J 1/10W		
R36			RK73FB2A393J	CHIP R	39K	J 1/10W		
R37			RK73FB2A272J	CHIP R	2.7K	J 1/10W		
R38			RK73FB2A333J	CHIP R	33K	J 1/10W		
R39			RK73FB2A223J	CHIP R	22K	J 1/10W		
R40			RK73FB2A332J	CHIP R	3.3K	J 1/10W		
R41			RK73FB2A222J	CHIP R	2.2K	J 1/10W		
R42			RK73FB2A473J	CHIP R	47K	J 1/10W		
R43 ,44			RK73FB2A332J	CHIP R	3.3K	J 1/10W		
R45 ,46			RK73FB2A122J	CHIP R	1.2K	J 1/10W		
R47 ,48			RK73FB2A392J	CHIP R	3.9K	J 1/10W		
R49			RK73FB2A473J	CHIP R	47K	J 1/10W		
R51			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R52			RK73FB2A104J	CHIP R	100K	J 1/10W		
R53			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R54			RK73FB2A683J	CHIP R	68K	J 1/10W		
R55			RK73FB2A473J	CHIP R	47K	J 1/10W		
R56			RK73FB2A104J	CHIP R	100K	J 1/10W		

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❹

Ref. No	Address	New Parts	Parts No.	Description			Destination	Remarks
R59			RK73FB2A222J	CHIP R	2.2K	J 1/10W		
R67			RK73FB2A104J	CHIP R	100K	J 1/10W		
R80			RK73EB2B102J	CHIP R	1.0K	J 1/8W		
R81 -83			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R84			RK73FB2A103J	CHIP R	10K	J 1/10W		
R85 -88			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R89			RD14NB2E101J	RD	100	J 1/4W		
R90			RK73FB2A562J	CHIP R	5.6K	J 1/10W		
R91			RK73FB2A222J	CHIP R	2.2K	J 1/10W		
R92			RK73FB2A123J	CHIP R	12K	J 1/10W		
R93			RK73FB2A122J	CHIP R	1.2K	J 1/10W		
R94			RD14NB2E561J	RD	560	J 1/4W		
R101,102			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R103			RK73FB2A821J	CHIP R	820	J 1/10W		
R104			RK73FB2A473J	CHIP R	47K	J 1/10W		
R105			RK73FB2A103J	CHIP R	10K	J 1/10W		
W51 -54			R92-0670-05	CHIP R	0 OHM			
W56 -58			R92-0679-05	CHIP R	0 OHM			
W59 -61			R92-0670-05	CHIP R	0 OHM			
W62 -67			R92-0679-05	CHIP R	0 OHM			
W69 -71			R92-0679-05	CHIP R	0 OHM			
W80			R92-0670-05	CHIP R	0 OHM			
W81			R92-0679-05	CHIP R	0 OHM			
W83 ,84			R92-0679-05	CHIP R	0 OHM			
D1			HSS104	DIODE				
D1			1SS133	DIODE				
D31			MTZJ8.2(B)	ZENER DIODE				
D31			UZ-8.2BSB	ZENER DIODE				
D32			MA111	DIODE				
D33			HSS104	DIODE				
D33			1SS133	DIODE				
D61 ,62			HSS104	DIODE				
D61 ,62			1SS133	DIODE				
D81			MTZJ5.1(B)	ZENER DIODE				
D81			UZ-5.1BSB	ZENER DIODE				
D101			MTZJ3.3(B)	ZENER DIODE				
D101			UZ-3.3BSB	ZENER DIODE				
IC1			LA1836	ANALOGUE IC				
IC2			LC72131	MOS-IC				
IC3			M5223FP	IC(OP AMP X4)				
Q1 ,2			2SC2714(R,O)	TRANSISTOR				
Q3			2SA1586(Y,GR)	TRANSISTOR				
Q3			2SA1611(M5,M6)	TRANSISTOR				
Q31 ,32			2SC4116(Y,GR)	TRANSISTOR				
Q31 ,32			2SC4177(L5,L6)	TRANSISTOR				
Q81			2SA1586(Y,GR)	TRANSISTOR				
Q81			2SA1611(M5,M6)	TRANSISTOR				
Q101,102			2SD1757K	TRANSISTOR				
Q103			2SA1586(Y,GR)	TRANSISTOR				
Q103			2SA1611(M5,M6)	TRANSISTOR				
A1		✻	W02-2565-05	FM FRONT-END ASSY				
AUDIO UNIT(X09-4952-70)								
C1 -12			CC73FCH1H221J	CHIP C	220PF	J		

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C13 ,14			CE04KW1E100M	ELECTRO	10UF	25WV		
C15 ,16			CC73FCH1H221J	CHIP C	220PF	J		
C17 ,18			CE04KW1E100M	ELECTRO	10UF	25WV		
C19 ,20			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C21 ,22			CK73FB1H562K	CHIP C	5600PF	K		
C23 -30			CK73FB1C154K	CHIP C	0.15UF	K		
C31 ,32			C90-3224-05	ELECTRO	4.7UF	16WV		
C33 ,34			C90-3240-05	ELECTRO	2.2UF	35WV		
C35 ,36			CC73FCH1H221J	CHIP C	220PF	J		
C37 ,38			CC73FCH1H102J	CHIP C	1000PF	J		
C39 ,40			C90-3211-05	ELECTRO	33UF	6.3WV		
C41 ,42			C90-3215-05	ELECTRO	220UF	6.3WV		
C43 ,44			CK73FB1H152K	CHIP C	1500PF	K		
C45 ,46			CE04KW1H100M	ELECTRO	10UF	50WV		
C47 ,48			CC73FCH1H102J	CHIP C	1000PF	J		
C49 -52			CK73FF1E104Z	CHIP C	0.10UF	Z		
C53 ,54			CK73FB1H472K	CHIP C	4700PF	K		
C55 ,56			CC73FCH1H070D	CHIP C	7.0PF	D		
C57 -60			CC73FCH1H470J	CHIP C	47PF	J		
C61 -68			CC73FCH1H101J	CHIP C	100PF	J		
C101,102		✻	C90-3774-05	ELECTRO	4700UF	50V		
C103			CK45FE2H103P	CERAMIC	0.010UF	P		
C104			CK73FB1H103K	CHIP C	0.010UF	K		
C105			CE04KW1V101M	ELECTRO	100UF	35WV		
C106			CE04KW1H470M	ELECTRO	47UF	50WV		
C107			CE04KW1V220M	ELECTRO	22UF	35WV		
C108			CE04KW1E101M	ELECTRO	100UF	25WV		
C109			CE04KW1H100M	ELECTRO	10UF	50WV		
C110			CE04KW1E100M	ELECTRO	10UF	25WV		
C111			CE04KW1H4R7M	ELECTRO	4.7UF	50WV		
C112			CE04KW1V102M	ELECTRO	1000UF	35WV		
C113			CE04KW1V221M	ELECTRO	220UF	35WV		
C114,115			CE04KW1V470M	ELECTRO	47UF	35WV		
C116-118			CK73FB1H102K	CHIP C	1000PF	K		
C119			CK73FB1H103K	CHIP C	0.010UF	K		
C121			CE04KW1H100M	ELECTRO	10UF	50WV		
C122,123			CE04KW1C470M	ELECTRO	47UF	16WV		
C124,125			CC73FSL1H221J	CHIP C	220PF	J		
C126,127			CK73FB1H103K	CHIP C	0.010UF	K		
C128			CC73FSL1H471J	CHIP C	470PF	J		
C129,130			CC73FSL1H221J	CHIP C	220PF	J		
C131			CC73FCH1H101J	CHIP C	100PF	J		
C132,133			CK73FB1H103K	CHIP C	0.010UF	K		
C134			CE04KW1H4R7M	ELECTRO	4.7UF	50WV		
C135			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C136			CK73FB1H103K	CHIP C	0.010UF	K		
C137,138			CC73FSL1H221J	CHIP C	220PF	J		
C140			CE04KW1C100M	ELECTRO	10UF	16WV		
C141			C90-3225-05	ELECTRO	10UF	16WV		
C142			CE04HW1E100M	NP-ELEC	10UF	25WV		
C143			CE04HW1H010M	NP-ELEC	1.0UF	50WV		
C144,145			CE04KW1C100M	ELECTRO	10UF	16WV		
C146			C90-3212-05	ELECTRO	47UF	6.3WV		
C147,148			C90-3225-05	ELECTRO	10UF	16WV		
C149			CC73FCH1H101J	CHIP C	100PF	J		

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C150			CK73FB1H103K	CHIP C	0.010UF	K		
C151			CC73FCH1H221J	CHIP C	220PF	J		
C152			CE04KW1A221M	ELECTRO	220UF	10WV		
C153			C90-3230-05	ELECTRO	100UF	16WV		
C154			CE04KW1V220M	ELECTRO	22UF	35WV		
CN1			E40-4807-05	PIN ASSY				
CN2 ,3			E40-4607-05	PIN ASSY				
CN4			E40-3246-05	PIN ASSY				
CN5			E40-4922-05	FLAT CABLE CONNECTOR				
CN6			E40-3246-05	PIN ASSY				
CN9 ,10			E40-4871-05	PIN ASSY				
CN11			E40-4632-05	PIN ASSY				
J1			E63-0116-05	PHONO JACK				
J2			E63-1033-05	PHONO JACK				
J3			E63-1034-05	PHONO JACK				
J4			E70-0034-05	LOCK TERMINAL BOARD				
J5			E08-0312-05	RECTANGULAR RECEPTACLE				
J6		✻	E63-1033-05	PHONO JACK				
J7		✻	E63-1034-05	PHONO JACK				
667			F09-0138-05	FAN				
-			F29-0112-05	INSULATING WASHER				
⚠ F1			F06-1022-05	FUSE (SEMKO)	(250V T1AL)			
CN12,13			J13-0075-05	FUSE CLIP				
R1 ,2			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R3 ,4			RK73FB2A683J	CHIP R	68K	J 1/10W		
R5 ,6			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R7 ,8			RK73FB2A683J	CHIP R	68K	J 1/10W		
R9 ,10			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R11 ,12			RK73FB2A104J	CHIP R	100K	J 1/10W		
R13 ,14			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R15 ,16			RK73FB2A683J	CHIP R	68K	J 1/10W		
R17 ,18			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R19 ,20			RK73FB2A104J	CHIP R	100K	J 1/10W		
R21 ,22			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R23 ,24			RK73FB2A683J	CHIP R	68K	J 1/10W		
R25 ,26			RK73FB2A224J	CHIP R	220K	J 1/10W		
R27 ,28			RK73FB2A330J	CHIP R	33	J 1/10W		
R29 ,30			RK73FB2A103J	CHIP R	10K	J 1/10W		
R31 ,32			RK73FB2A272J	CHIP R	2.7K	J 1/10W		
R33 ,34			RK73FB2A562J	CHIP R	5.6K	J 1/10W		
R35 ,36			RK73FB2A223J	CHIP R	22K	J 1/10W		
R37 -40			RK73FB2A222J	CHIP R	2.2K	J 1/10W		
R41 ,42			RK73FB2A473J	CHIP R	47K	J 1/10W		
R43 ,44			RK73FB2A222J	CHIP R	2.2K	J 1/10W		
R45 ,46			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R47 ,48			RK73FB2A473J	CHIP R	47K	J 1/10W		
R49 ,50			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R52			RK73FB2A393J	CHIP R	39K	J 1/10W		
R53 ,54			RK73FB2A911J	CHIP R	910	J 1/10W		
R55 ,56			RK73FB2A393J	CHIP R	39K	J 1/10W		
R59 ,60			RK73FB2A103J	CHIP R	10K	J 1/10W		
R65 -68			RK73FB2A471J	CHIP R	470	J 1/10W		
R75 ,76			RD14NB2E181J	RD	180	J 1/4W		

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R77 -82			RK73FB2A561J	CHIP R	560	J	1/10W		
R83 ,84			RD14NB2E181J	RD	180	J	1/4W		
R87 -90			RD14NB2E4R7J	RD	4.7	J	1/4W		
R91 ,92			RK73FB2A431J	CHIP R	430	J	1/10W		
R96			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R101,102			RK73FB2A512J	CHIP R	5.1K	J	1/10W		
R107,108			RS14KB3D4R7J	FL-PROOF RS	4.7	J	2W		
R152			RD14NB2E560J	RD	56	J	1/4W		
⚠ R154			RD14BB2E102J	RD	1.0K	J	1/4W		
R155			RD14NB2E222J	RD	2.2K	J	1/4W		
⚠ R159			RD14NB2E3R3J	RD	3.3	J	1/4W		
⚠ R160			RD14NB2E2R2J	RD	2.2	J	1/4W		
R166			RK73FB2A163J	CHIP R	16K	J	1/10W		
R167			RK73FB2A153J	CHIP R	15K	J	1/10W		
R168,169			RK73FB2A104J	CHIP R	100K	J	1/10W		
R170			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R174			RS14KB3A821J	FL-PROOF RS	820	J	1W		
R176			RK73FB2A103J	CHIP R	10K	J	1/10W		
R177			RD14NB2E470J	RD	47	J	1/4W		
R180			RK73FB2A103J	CHIP R	10K	J	1/10W		
R181			RD14NB2E470J	RD	47	J	1/4W		
R182			RK73FB2A103J	CHIP R	10K	J	1/10W		
R184			RK73FB2A243J	CHIP R	24K	J	1/10W		
R185			RK73FB2A103J	CHIP R	10K	J	1/10W		
R187			RD14NB2E470J	RD	47	J	1/4W		
R189,190			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R191			RD14NB2E151J	RD	150	J	1/4W		
R192			RK73FB2A473J	CHIP R	47K	J	1/10W		
R193			RK73FB2A104J	CHIP R	100K	J	1/10W		
R194			RK73FB2A224J	CHIP R	220K	J	1/10W		
R195			RK73FB2A332J	CHIP R	3.3K	J	1/10W		
R196			RK73FB2A473J	CHIP R	47K	J	1/10W		
R197			RK73FB2A103J	CHIP R	10K	J	1/10W		
R199			RK73FB2A222J	CHIP R	2.2K	J	1/10W		
R204			RK73FB2A103J	CHIP R	10K	J	1/10W		
R207			RK73FB2A474J	CHIP R	470K	J	1/10W		
R208			RK73FB2A623J	CHIP R	62K	J	1/10W		
R212			RK73FB2A104J	CHIP R	100K	J	1/10W		
R213			RK73FB2A222J	CHIP R	2.2K	J	1/10W		
R214			RK73FB2A103J	CHIP R	10K	J	1/10W		
VR1 ,2			R12-0607-05	TRIMMING POT					
W201-207			R92-0670-05	CHIP R	0 OHM				
W211,212			R92-0679-05	CHIP R	0 OHM				
W213			R92-0670-05	CHIP R	0 OHM				
W214			R92-0679-05	CHIP R	0 OHM				
⚠ K1			S76-0058-05	MAGNETIC RELAY					
K2 ,3			S76-0056-05	MAGNETIC RELAY					
TS1			S79-0020-05	THERMAL SWITCH					
D1 -16			HSS104	DIODE					
D1 -16			1SS133	DIODE					
D21			HSS104	DIODE					
D21			1SS133	DIODE					
D22			MA111	DIODE					
D23			MTZJ4.7(B)	ZENER DIODE					

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D23			RD4.7ES(B)	ZENER DIODE		
⚠ D24 -27			S5688B	DIODE		
⚠ D24 -27			1SR139-400	DIODE		
D28			HSS104	DIODE		
D28			1SS133	DIODE		
⚠ D29			D5SBA20F03	DIODE		
⚠ D29			RBV-602LFA	DIODE		
⚠ D30 -32			S5688B	DIODE		
⚠ D30 -32			1SR139-400	DIODE		
D33 ,34			MTZJ16(B)	ZENER DIODE		
D33 ,34			RD16ES(B)	ZENER DIODE		
⚠ D35 ,36			HSS104	DIODE		
⚠ D35 ,36			1SS133	DIODE		
⚠ D37 ,38			S5688B	DIODE		
⚠ D37 ,38			1SR139-400	DIODE		
D39			MTZJ6.2(B)	ZENER DIODE		
D39			RD6.2ES(B)	ZENER DIODE		
D40 ,41			MTZJ5.1(B)	ZENER DIODE		
D40 ,41			RD5.1ES(B)	ZENER DIODE		
D42			MTZJ6.2(B)	ZENER DIODE		
D42			RD6.2ES(B)	ZENER DIODE		
D44 ,45			MTZJ4.7(B)	ZENER DIODE		
D44 ,45			RD4.7ES(B)	ZENER DIODE		
D46			MTZJ3.9(B)	ZENER DIODE		
D46			RD3.9ES(B)	ZENER DIODE		
D47 ,48			HSS104	DIODE		
D47 ,48			1SS133	DIODE		
D49			MTZJ4.7(B)	ZENER DIODE		
D49			RD4.7ES(B)	ZENER DIODE		
D50			MTZJ6.2(B)	ZENER DIODE		
D50			RD6.2ES(B)	ZENER DIODE		
D51			HSS104	DIODE		
D51			1SS133	DIODE		
IC1			NJU7313AM	ANALOGUE IC		
IC2			NJM4565D-D	IC(OP AMP X2)		
IC3			TDA7319	ANALOGUE IC		
IC4			NJM4565D-D	IC(OP AMP X2)		
IC5			NJM4565L-D	ANALOGUE IC		
Q1 -4			2SC2878(B)	TRANSISTOR		
Q5 ,6			2SC1845(F,E)	TRANSISTOR		
Q7 -10			2SA992(F,E)	TRANSISTOR		
Q11 ,12			2SC1845(F,E)	TRANSISTOR		
⚠ Q13 ,14			TRAITR2N	TRANSISTOR		
⚠ Q15 ,16			TRAITR2P	TRANSISTOR		
Q17 ,18			2SC1845(F,E)	TRANSISTOR		
Q31 ,32			2SC2458(Y,GR)	TRANSISTOR		
Q31 ,32			2SC3311A(Q,R)	TRANSISTOR		
Q33 ,34			2SC4097(Q,R)	TRANSISTOR		
Q35			2SA992(F,E)	TRANSISTOR		
Q36			2SC4097(Q,R)	TRANSISTOR		
Q37			2SB1640	TRANSISTOR		
Q38			2SC4116(Y,GR)	TRANSISTOR		
Q38			2SC4177(L5,L6)	TRANSISTOR		
Q39			2SC4097(Q,R)	TRANSISTOR		
Q40			2SA1534A(R,S)	TRANSISTOR		

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⚠ Q41			2SD2525	TRANSISTOR				
Q42			DTC113ZSA	DIGITAL TRANSISTOR				
Q42			UN4219	DIGITAL TRANSISTOR				
⚠ Q43			2SD2589	TRANSISTOR				
⚠ Q44			2SA1534A(R,S)	TRANSISTOR				
Q45			2SC2458(Y,GR)	TRANSISTOR				
Q45			2SC3311A(Q,R)	TRANSISTOR				
Q46			2SA1048(Y,GR)	TRANSISTOR				
Q46			2SA1309A(Q,R)	TRANSISTOR				
Q47 ,48			2SA1586(Y,GR)	TRANSISTOR				
Q47 ,48			2SA1611(M5,M6)	TRANSISTOR				
Q49			2SK246(Y,GR)	FET				
Q50 ,51			2SC4116(Y,GR)	TRANSISTOR				
Q50 ,51			2SC4177(L5,L6)	TRANSISTOR				
DISPLAY UNIT(X14-4562-72)								
D27			B30-2515-05	LED(ORG-600NM,3)				
C1 ,2			CC73FSL1H102J	CHIP C	1000PF	J		
C11			CK73FB1H103K	CHIP C	0.010UF	K		
C12			C90-3253-05	ELECTRO	1.0UF	50WV		
C13 ,14			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C15			C90-3216-05	ELECTRO	330UF	6.3WV		
C16 ,17			CK73FB1H103K	CHIP C	0.010UF	K		
C18			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C19			CC73FCH1H220J	CHIP C	22PF	J		
C20			CC73FCH1H180J	CHIP C	18PF	J		
C21 -24			CK73FB1H103K	CHIP C	0.010UF	K		
C25			CE04KW1C330M	ELECTRO	33UF	16WV		
C26			CK73FB1H103K	CHIP C	0.010UF	K		
C27			CC73FCH1H470J	CHIP C	47PF	J		
C28			CC73FCH1H180J	CHIP C	18PF	J		
C29			C90-3240-05	ELECTRO	2.2UF	35WV		
C30			CC73FCH1H331J	CHIP C	330PF	J		
C31			CC73FSL1H561J	CHIP C	560PF	J		
C32			CK73FB1H103K	CHIP C	0.010UF	K		
C33			C90-3220-05	ELECTRO	47UF	10WV		
C34			CK73FB1H103K	CHIP C	0.010UF	K		
C35			CC73FCH1H101J	CHIP C	100PF	J		
C36			CK73FF1C105Z	CHIP C	1.0UF	Z		
C37 ,38			CC45FSL1H101J	CERAMIC	100PF	J		
C39 ,40			CK73FB1H473K	CHIP C	0.047UF	K		
C41			CK73FB1H103K	CHIP C	0.010UF	K		
CN1			E40-4960-05	FLAT CABLE CONNECTOR				
J1			E11-0300-05	PHONE JACK				
-			J19-5821-03	HOLDER				
L1			L40-1091-17	SMALL FIXED INDUCTOR(1UH)				
L2			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)				
X1			L78-0267-05	RESONATOR (4.194MHZ)				
X2			L77-2173-05	CRYSTAL RESONATOR(32.768KHZ)				
X3			L77-2002-05	CRYSTAL RESONATOR(4.332MHZ)				
R1 ,2			RS14KB3D391J	FL-PROOF RS	390	J 2W		
R11			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R12 ,13			RK73FB2A103J	CHIP R	10K	J 1/10W		
R14			RK73FB2A104J	CHIP R	100K	J 1/10W		
R15			RK73FB2A102J	CHIP R	1.0K	J 1/10W		

L : Scandinavia **K :** USA **P :** Canada **R :** Mexico **C :** China
Y : PX(Far East, Hawaii) **T :** Europe **E :** Europe **G :** Germany
Y : AAFES(Europe) **X :** Australia **I :** Malaysia **V :** China (Shanghai)
Q : Russia **H :** Korea **M :** Other Areas ⚠ indicates safety critical components.

✻ New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

⑩

Ref. No	Address	New Parts	Parts No.	Description			Destination	Remarks
R16			RK73FB2A103J	CHIP R	10K	J 1/10W		
R17			RK73FB2A102J	CHIP R	1.0K	J 1/10W		
R18			RK73FB2A331J	CHIP R	330	J 1/10W		
R19 ,20			RK73FB2A104J	CHIP R	100K	J 1/10W		
R21			RK73FB2A331J	CHIP R	330	J 1/10W		
R22 -24			RK73FB2A101J	CHIP R	100	J 1/10W		
R25 -27			RK73FB2A473J	CHIP R	47K	J 1/10W		
R29 ,30			RK73FB2A103J	CHIP R	10K	J 1/10W		
R31 ,32			RK73FB2A101J	CHIP R	100	J 1/10W		
R33 ,34			RK73FB2A103J	CHIP R	10K	J 1/10W		
R35			RK73FB2A564J	CHIP R	560K	J 1/10W		
R36 -39			RK73FB2A473J	CHIP R	47K	J 1/10W		
R42			RK73FB2A101J	CHIP R	100	J 1/10W		
R44			RK73FB2A101J	CHIP R	100	J 1/10W		
R45			RK73FB2A222J	CHIP R	2.2K	J 1/10W		
R46			RK73FB2A101J	CHIP R	100	J 1/10W		
R47			RK73FB2A222J	CHIP R	2.2K	J 1/10W		
R48			RK73FB2A101J	CHIP R	100	J 1/10W		
R49			RK73FB2A473J	CHIP R	47K	J 1/10W		
R50			RK73FB2A101J	CHIP R	100	J 1/10W		
R52			RK73EB2B101J	CHIP R	100	J 1/8W		
R53			RK73EB2B473J	CHIP R	47K	J 1/8W		
R54 -56			RK73FB2A473J	CHIP R	47K	J 1/10W		
R57			RK73FB2A101J	CHIP R	100	J 1/10W		
R58			RK73FB2A473J	CHIP R	47K	J 1/10W		
R59 ,60			RK73FB2A101J	CHIP R	100	J 1/10W		
R61			RK73FB2A473J	CHIP R	47K	J 1/10W		
R62			RK73FB2A101J	CHIP R	100	J 1/10W		
R63			RK73FB2A473J	CHIP R	47K	J 1/10W		
R64			RK73FB2A101J	CHIP R	100	J 1/10W		
R65			RK73FB2A473J	CHIP R	47K	J 1/10W		
R66			RK73FB2A222J	CHIP R	2.2K	J 1/10W		
R67 ,68			RK73FB2A223J	CHIP R	22K	J 1/10W		
R71 ,72			RK73FB2A101J	CHIP R	100	J 1/10W		
R74			RK73FB2A101J	CHIP R	100	J 1/10W		
R76 ,77			RK73FB2A101J	CHIP R	100	J 1/10W		
S3 -9			S70-0031-05	TACT SWITCH				
S1			T99-0598-05	ROTARY ENCODER				
S2			T99-0601-05	ROTARY ENCODER				
D11 -14			HSS104A	DIODE				
D11 -14			1SS131	DIODE				
D15 -20			MA111	DIODE				
D21 -26			HSS104A	DIODE				
D21 -26			1SS131	DIODE				
D28			HSS104A	DIODE				
D28			1SS131	DIODE				
ED1			FIP9GM6R	INDICATOR TUBE				
IC1			UPD78045FGF065	MI-COM IC				
IC2			S-806D-Z	ANALOGUE IC				
IC3			X24C04S	MEMORY IC				
IC4		✻	SAA6579T	ANALOGUE IC				
Q1			2SC1740S(Q,R)	TRANSISTOR				
Q1			2SC2785(F,E)	TRANSISTOR				
A1			W02-2561-05	ELECTRIC CIRCUIT MODULE				

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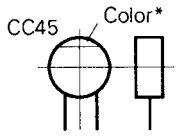
PARTS DESCRIPTIONS

CAPACITORS

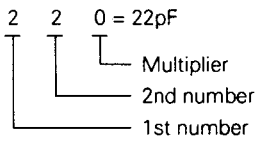
CC 45 TH 1H 220 J
1 2 3 4 5 6

1 = Type ... ceramic, electrolytic, etc.
2 = Shape ... round, square, ect.
3 = Temp. coefficient
4 = Voltage rating
5 = Value
6 = Tolerance



• Capacitor value

010 = 1pF
100 = 10pF
101 = 100pF
102 = 1000pF = 0.001µF
103 = 0.01µF



• Temperature coefficient

1st Word	C	L	P	R	S	T	U
Color*	Black	Red	Orange	Yellow	Green	Blue	Violet
ppm/°C	0	-80	-150	-220	-330	-470	-750

2nd Word	G	H	J	K	L
ppm/°C	±30	±60	±120	±250	±500

Example : CC45TH = -470 ± 60ppm/°C

• Tolerance (More than 10pF)

Code	C	D	G	J	K	M	X	Z	P	No code
(%)	±0.25	±0.5	±2	±5	±10	±20	+40	+80	+100	More than 10µF - 10 ~ +50
							-20	-20	-0	Less than 4.7µF -10 ~ +75

(Less than 10pF)

Code	B	C	D	F	G
(pF)	±0.1	±0.25	±0.5	±1	±2

• Voltage rating

1st word \ 2nd word	A	B	C	D	E	F	G	H	J	K	V
0	1.0	1.25	1.6	2.0	2.5	3.15	4.0	5.0	6.3	8.0	-
1	10	12.5	16	20	25	31.5	40	50	63	80	35
2	100	125	160	200	250	315	400	500	630	800	-
3	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	-

• Chip capacitors

(EX) C C 7 3 F S L 1 H 0 0 0 J
1 2 3 4 5 6 7
(Chip) (CH, RH, UJ, SL)

(EX) C K 7 3 F F 1 H 0 0 0 Z
1 2 3 4 5 6 7
(Chip) (B, F)

Refer to the table above.
1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Voltage rating
6 = Value
7 = Tolerance

Dimension (Chip capacitors)

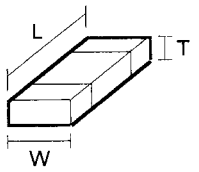
Dimension code	L	W	T
Empty	5.6 ± 0.5	5.0 ± 0.5	Less than 2.0
A	4.5 ± 0.5	3.2 ± 0.4	Less than 2.0
B	4.5 ± 0.5	2.0 ± 0.3	Less than 2.0
C	4.5 ± 0.5	1.25 ± 0.2	Less than 1.25
D	3.2 ± 0.4	2.5 ± 0.3	Less than 1.5
E	3.2 ± 0.2	1.6 ± 0.2	Less than 1.25
F	2.0 ± 0.3	1.25 ± 0.2	Less than 1.25
G	1.6 ± 0.2	0.8 ± 0.2	Less than 1.0

RESISTORS

• Chip resistor (Carbon)

(EX) R K 7 3 E B 2 B 0 0 0 J
1 2 3 4 5 6 7
(Chip) (B,F)

Dimension



• Carbon resistor (Normal type)

(EX) R D 1 4 B B 2 C 0 0 0 J
1 2 3 4 5 6 7

1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Rating wattage
6 = Value
7 = Tolerance

Dimension (Chip resistor)

Dimension code	L	W	T
E	3.2 ± 0.2	1.6 ± 0.2	1.0
F	2.0 ± 0.3	1.25 ± 0.2	1.0
G	1.6±0.2	0.8±0.2	0.5±0.1

Rating wattage

Code	Wattage	Code	Wattage	Code	Wattage
1J	1/16W	2C	1/6W	3A	1W
2A	1/10W	2E	1/4W	3D	2W
2B	1/8W	2H	1/2W		

R-SE9/SE9T

SPECIFICATIONS

Receiver (R-SE9T)

[Amplifier section]

Rated power output
(DIN) 1 kHz at 6 Ω, 0.7 % T.H.D. ..... 40 W + 40 W
Total harmonic distortion
..... 0.06% (40 Hz ~ 20 kHz, 20 W, 6 Ω)
Frequency response ..... 20 Hz ~ 40 kHz, +0 dB, –3 dB
Input sensitivity / Impedance
..... 200 mV / 47 kΩ
Output level / Impedance
SUPER WOOFER PRE OUT ..... 2.0 V / 1.5 kΩ
TAPE REC ..... 200 mV / 1 kΩ
Signal to noise ratio
..... 92 dB (IHF'66)
Total control
BASS ..... ±10 dB (at 150 Hz)
TREBLE ..... ±10 dB (at 10 kHz)

[FM Tuner section]

Tuning frequency range ..... 87.5 MHz ~ 108 MHz
Usable sensitivity (DIN)
MONO
.. 1.2 μV (75 Ω) / 13.2 dBf (40 kHz DEV., S/N 26 dB)
Signal to noise ratio
(DIN weighted at 1 kHz, 65.2 dBf input)
MONO ..... 65 dB
STEREO ..... 58 dB
Selectivity (DIN ±300 kHz) ..... 64 dB
Stereo separation (DIN at 1 kHz) ..... 40 dB

[AM Tuner section]

Tuning frequency range ..... 531 kHz ~ 1,602 kHz
Usable sensitivity (30% mod., S/N 20 dB)
..... 12 μV / (500 μV/m)
Signal to noise ratio (at 30% mod., 1 mV input)
..... 48 dB
Output level / Impedance (30% mod., 1 mV input)
..... 0.18 V / 1 kΩ

General
Power consumption ..... 80 W
Dimensions ..... W: 213 mm
H: 97 mm
D: 282 mm
Weight (net) ..... 3.8 kg

Notes

1. KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.
2. Sufficient performance may not be possible at very low temperatures (0°C or less).

Note:
Component and circuit are subject to modification to insure best operation under differing local conditions. This manual is based on Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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